13081500 SNAKE RIVER NEAR MINIDOKA, ID--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD .-- July 1989 to current year.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: June to September 1993, June to September 1994, July through September 1996 (discontinued).

INSTRUMENTATION.--Temperature recording data logger.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum, 24.0 °C Aug. 3-5, 1994.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum, 22.3 °C July 27, 31.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	TEMPEI ATURI AIR (DEG (E ATURE WATER C) (DEG C)	TUR- BID- ITY (NTU) (00076)	OXYGEN, DIS- SOLVED (MG/L)	(PER- CENT SATUR- ATION)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)
APR 24	1100	12500	429	8.6	7.5	6.5	1.3	11.2	107	K2	
MAY 22	1445	11300	418	8.7	13.5	12.0	3.0	10.0	109	K1	220
20 JUL	1430	12200	352	8.7	25.0	16.0	1.9	9.1	108	K4	K13
10 AUG	1200	12200	342	8.5	29.5	18.0	1.2	8.7	107	22	110
07 SEP	1215	9520	345	8.6	28.0	17.0	3.1	8.5	102	K4	38
04	1300	8090	361	8.7	30.5	17.5	2.4	8.5	105	K13	84
DATE	HARD- NESS TOTAL (MG/L AS CACO3)		DI D SOL (MO	M, S- VED S/L MG)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	BICAR- BONATE WATER WH FET FIELD MG/L AS HCO3 (00440)	CO3	FE PR ET T D AS N	ALKA- LINITY WAT WH FOT FET FIELD MG/L AS CACO3 (00410)
SEP											
04	150	42	12		14	16	2.6	160	5		140
DATE		SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO RIDE DIS- SOLVI (MG/ AS F	, - ED L)	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)	SOLIDS, DIS- SOLVED (TONS PER AC-FT) (70303)	SOLID: DIS- SOLVE (TON: PER DAY)	ED S
SEP								0.4.4		4500	
04		28	13	0.5)	15	210	211	0.29	4590	
DATE		NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N) (00613)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO GEN, AMMON DIS- SOLVI (MG/ AS N	, (IA - (ED L)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	SEDI- MENT, SUS- PENDED (MG/L) (80154)	SEDI MENT DIS- CHARGI SUS- PENDE (T/DA)	, E, ;D Y)
APR										0.50	
24 MAY 22		<0.01	<0.05 <0.05	<0.0		0.3	<0.01	<0.01	8	270 244	
JUN 20		<0.01	<0.05	0.0		0.2	0.07	<0.01	5	165	
JUL 10		0.02	1.8	0.0		0.3	0.06	0.06	2	66	
AUG 07		<0.01	0.06	0.0		0.3	0.05	0.03	10	257	
SEP 04		0.01	<0.05	0.0	020	0.4	0.06	0.03	6	131	
V Dogulta	a based on	. govern out	aido idosl	anlanır wa	200						

 $[\]ensuremath{\mathrm{K}}$ Results based on counts outside ideal colony range.

13081500 SNAKE RIVER NEAR MINIDOKA, ID--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JULY			AUGUST		S	EPTEMBE	IR.
1				22.0	21.3	21.6	20.2	19.4	19.8
2				21.7	21.0	21.4	19.9	19.2	
3				21.7	20.3	20.7	20.0	19.0	
4				20.3	19.5	20.0	19.7	19.0	
5				19.9	18.7	19.4	19.0	18.2	
_									
6				19.0	18.2	18.6	18.7	17.9	
7				19.4	18.1	18.7	18.6	17.7	
8				19.5	18.7	19.0	18.4	17.4	
9				19.2	18.1	18.8	18.6	17.4	
10				19.5	18.1	18.7	18.4	17.4	17.7
11				20.7	18.9	19.8	18.7	17.7	18.1
12				20.2	19.2	19.8	18.7	17.7	18.0
13				20.2	19.0	19.7	18.2	17.4	17.8
14				20.5	19.7	20.1	18.1	17.3	17.5
15				21.7	19.9	20.7	17.7	16.6	17.2
16				22.0	21.0	21.4	16.8	16.2	16.5
17	21.5	20.2	20.7	21.2	20.5	20.8	16.3	15.4	
18	21.0	20.2	20.6	20.5	19.9	20.2	15.8	14.9	
19	20.7	19.7	20.2	20.7	19.9	20.2	15.4	14.6	14.9
20	20.3	19.5	19.8	20.2	19.5	19.8	15.5	14.3	
21	20.3	19.4	19.7	20.0	19.2	19.6	15.4	14.3	14.7
22	20.3	19.4	19.7	20.0	19.0	19.4	15.0	14.3	
23	20.3	19.2	20.0	20.0	19.0	19.4	14.7	13.6	
24	21.0	19.9	20.3	20.2	19.4	19.4	14.6	13.5	
25	20.7	20.0	20.3	20.5	19.4	19.8	14.1	13.2	13.5
26	21.5	20.0	20.8	20.7	19.7	20.2	14.0	12.9	13.2
27	22.3	20.8	21.5	20.7	19.7	20.1	13.8	12.7	
28	22.0	21.0	21.4	20.2	19.4	19.7	14.1	12.7	
29	22.0	20.8	21.4	20.2	19.2	19.7	14.3	12.7	
30	21.7	20.3	21.0	20.8	19.5	20.0	14.4	12.9	13.4
31	22.3	20.8	21.5	20.5	19.7	20.1			
MONTH				22.0	18.1	19.9	20.2	12.7	16.3

13081500 SNAKE RIVER NEAR MINIDOKA, ID--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--July 1989 to September 1996 (discontinued).

 $\hbox{COLLECTION METHODS.--Composite of 5, 0.25 m}^2 \ samples. \ Richest \ targeted \ habitat--riffles, half \ field \ sub-sample. } \\ \hbox{MESH SIZE.--425 um}.$

AVERAGE DEPTH.--0.48 m.

AVERAGE PERCENT SHADING .-- 3.

AVERAGE VELOCITY .-- 0.69 m/s.

SUBSTRATE EMBEDDEDNESS CLASS RANGE.--4.

PERCENT FINES RANGE.--10.

HILSENHOFF BIOTIC INDEX

HABITAT QUALITY INDEX.--NA.

REMARKS.--Large river, riffles uncommon.

BIOLOGICAL DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996 BENTHIC INVERTEBRATE COLLECTION DATA

SHANNON DIVERSITY INDEX (H) 1.56

ORGANISM TAXON GENUS SPECIES DATE JULY 30	NUMBER OF INDIV- IDUALS	PERCENT COMPO- SITION	FUNC - TIONAL FEEDING GROUP	POLLU- TION TOLER- ANCE VALUE
NON-INSECTS Physella integra Gyraulus parvus Cladocera Copepoda Hyalella azteca	113 338 30150 788 1238	0.16 0.48 42.68 1.11 1.75	CG SC CF CG CG	8 6 8 8
EPHEMEROPTERA Baetis tricaudatus Tricorythodes minutus TRICHOPTERA	1800 788	2.55 1.11	CG	6 4
Hydropsyche LEPIDOPTERA Petrophila DIPTERA	34538 112.5	0.32	CF SC	4 5
Simuliidae CHIRONOMIDAE Chironomidae-pupae	281.3 56.25	0.8	CF UN	6
TOTAL NUMBER OF TAXA TOTAL NUMBER OF ORGANISMS	11 70651/m²	_	PT ABUNDANCE UMBER EPT TAXA	37125/m ² 3

13081500 SNAKE RIVER NEAR MINIDOKA, ID--Continued

COLLECTION METHODS.--Qualitative multiple habitat, relative abundance, whole sample.

MESH SIZE .-- 210 um.

GEAR TYPE.--D-frame net and visual collections.

REACH LENGTH.--515 m.

AVERAGE WIDTH.--119 m $_{\rm e}$.

HABITAT QUALITY INDEX.--NA.

REMARKS .-- Large river, riffles common.

BIOLOGICAL DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996 BENTHIC INVERTEBRATE COLLECTION DATA

SHANNON DIVERSITY INDEX (H) 3.47

	NUMBER		FUNC-	POLLU- TION
ORGANISM	OF	PERCENT	TIONAL	TOLER-
TAXON	INDIV-	COMPO-	FEEDING	ANCE
GENUS SPECIES	DATE IDUALS	SITION	GROUP	VALUE
	JULY 30	5111011	011001	***************************************
NON-INSECTS				
Nematoda	30	0.39	PA	5
Oligochaeta	1215	15.82	CG	5
Hirudinea	15	0.2	PR	10
Sphaeriidae	15	0.2	CG	8
Stagnicola caperata	495	6.45	CG	6
Physella integra	180	2.34	CG	8
Gyraulus parvus	570 15	7.42 0.2	SC CG	6 8
Copepoda Ostracoda	15	0.2	CG	8
Hvalella azteca	1335	17.38	CG	8
Acari	15	0.2	PA	5
ACULI	13	0.2	in.	3
EPHEMEROPTERA				
Baetis tricaudatus	465	6.05	CG	6
Tricorythodes minutu	s 480	6.25	CG	4
TRICHOPTERA				
Helicopsyche boreali:	s 15	0.2	SC	3
Hydropsyche	1860	24.22	CF	4
Hydroptila	30	0.39	PH	6
Ochrotrichia	60	0.78	PH	4
Limnephilus	15	0.2	SH	3
LEPIDOPTERA Petrophila	15	0.2	SC	5
COLEOPTERA Psephenus	15	0.2	SC	4
Psephenus	15	0.2	SC	4
DIPTERA				
Ceratopogoninae	15	0.2	PR	6
Simuliidae	75	0.98	CF	6
CHIRONOMIDAE				
Chironomidae-pupae	75	0.98	UN	6
Cardiocladius	75 45	0.50	PR	5
Chironomus	15	0.2	CG	10
Cricotopus	165	2.15	CG	7
Cricotopus Bicinctus		2.34	CG	7
Dicrotendipes	150	1.95	CG	8
Eukiefferiella	15	0.2	MO	8
Orthocladius Complex		0.39	CG	6
Paratanytarsus	45	0.59	UN	6
Polypedilum	15	0.2	OM	6
TOTAL NUMBER OF TAXA	A 32	E.	PT ABUNDANCE	2925
TOTAL NUMBER OF ORGA			UMBER EPT TAXA	7
TOTAL NUMBER OF ORGA			UMBER EPT TAXA	

e Estimated

HILSENHOFF BIOTIC INDEX

5.70

13081500 SNAKE RIVER NEAR MINIDOKA, ID--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1989 to 1996, April to September 1998 (discontinued).

PERIOD OF DAILY RECORD .--

WATER TEMPERATURE: June to September 1993, June to September 1994, July to September 1996, February to September 1998 (discontinued).

INSTRUMENTATION .-- Temperature recording data logger.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum, 24.0 $^{\rm o}$ C Aug. 3-5, 1994; minimum recorded, 0.8 $^{\rm o}$ C March 8, 1998.

EXTREMES FOR CURRENT PERIOD .--

WATER TEMPERATURE: Maximum, 23.6 $^{\rm o}{\rm C}$ July 25, 29-30; minimum recorded, 0.8 $^{\rm o}{\rm C}$ March 8.

		W	ATER-QUALIT	Y DATA, WA	TER YEAR OC	TOBER 19	97 TO SEP	TEMBER 199	8		
DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	TEMPER- ATURE AIR (DEG C) (00020)	TEMPER- ATURE WATER (DEG C) (00010)	TUR- BID- ITY (NTU) (00076)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (00301)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)
APR 08 MAY	0915	12200	421	8.6	2.0	6.0	2.8	10.9	102	K15	K32
05 JUN	0915	10500	426	8.3	15.0	13.0	1.6	9.3	105	K10	160
11 JUL	0900	18500	369	8.4	13.5	15.0	1.0	8.7	101	K2	к7
09 AUG	0930	10500	351	8.4	21.5	20.0	1.9	9.2	119	К4	31
05 SEP	0915	10200	350	8.4	25.0	22.5	1.0	8.2	110	K11	160
10	0915	8820	383	8.1	13.0	20.0		7.1	93	17	67
DATE		HARD- NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA)	S0 PE	DDIUM RCENT 0932)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ANC WATER UNFLTRD FET FIELD MG/L AS HCO3 (00440)	ANC UNFLTR CARB FET FIELD MG/L A CO3) AS
SEP 10		160	42	12	15	1	L7	2.9	160	5	
DATE		ANC WATER UNFLTRD FET FIELD MG/L AS CACO3 (00410)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	I S0 (LICA, DIS- DLVED MG/L AS IO2) 0955)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)	SOLIDS, DIS- SOLVED (TONS PER AC-FT) (70303)	SOLIDS DIS- SOLVES (TONS PER DAY) (70302	D 3
SEP											
10		137	29	14	.62	1	14	211	.29	5030	
DATE		NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N) (00613)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	P! P! T (HOS- HORUS OTAL MG/L S P) 0665)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	SEDI- MENT, SUS- PENDED (MG/L) (80154)	SEDI- MENT, DIS- CHARGE SUS- PENDE: (T/DAY	D (7)
APR											
08. MAY		<.010	.122	.029	.41		.028	.011	7	231	
05 JUN		.011	<.050	.033	.33		<.010	<.010	4	113	
JUL		.012	.063	.035	.32		.037	<.010	3	150	
09 AUG		<.010	<.050	.026	.31		<.010	.017	4	113	
05 SEP		<.010	<.050	.046	.34		.023	.019	6	165	
10	• •	<.010	<.050	.024	.43		.073	.034	11	262	

 $\ensuremath{\mathtt{K}}$ Results based on counts outside ideal colony range.

13081500 SNAKE RIVER NEAR MINIDOKA, ID--Continued

WATRER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DAY MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	
		FEBRUAR	Y		MARCH			APRIL			MAY	
1				2.1	1.6	1.7	6.1	5.5	5.8	13.1	12.0	12.5
2				1.9	1.7	1.8	6.0	5.7	5.8	13.6	12.2	12.8
3				2.1	1.7	1.9	6.1	5.7	5.8	12.7	11.4	12.2
4				2.2	1.6	1.8	6.0	5.8	5.8	12.7	11.4	12.1
5				2.5	1.7	2.0	6.3	5.7	6.0	13.4	12.2	12.8
3				2.5	1.7	2.0	0.5	3.7	0.0	13.1	12.2	12.0
6				2.2	1.3	1.8	6.5	5.8	6.1	14.5	13.0	13.6
7				2.1	0.9	1.5	6.6	5.8	6.2	14.4	13.4	13.9
8				1.9	0.8	1.2	6.8	6.1	6.4	14.2	12.5	13.6
9				3.6	1.1	1.8	7.1	6.5	6.7	13.3	12.4	12.8
10				3.8	1.3	2.2	7.4	6.8	7.0	13.6	12.5	13.1
11				3.6	1.7	2.4	7.9	7.1	7.3	13.9	13.0	13.3
12				3.6	2.1	2.8	7.7	7.2	7.4	13.6	13.3	13.4
13				4.0	2.5	3.2	7.7	7.2	7.4	13.6	12.7	13.1
14				4.1	3.2	3.6	7.5	7.2	7.3	12.7	12.0	12.5
15				4.3	3.6	4.0	7.5	6.9	7.2	12.2	11.7	12.0
16				4.9	4.0	4.4	7.4	6.9	7.1	12.4	11.9	12.1
17				5.2	4.6	4.9	7.2	6.8	7.0	12.0	11.6	11.8
18				5.5	4.9	5.1	7.7	6.8	7.1	11.9	11.3	11.6
19				5.7	4.9	5.2	7.5	6.9	7.2	12.4	11.6	12.0
20				6.1	5.1	5.5	8.5	7.2	7.9	12.7	12.0	12.4
21				6.3	5.5	5.8	9.2	8.2	8.7	12.8	12.4	12.5
22				6.0	5.7	5.8	9.9	8.9	9.5	12.7	12.4	12.5
23				6.0	5.5	5.7	10.5	9.6	9.9	12.8	12.5	12.7
24				6.1	5.8	5.9	10.2	9.2	9.8	13.1	12.5	12.8
25				6.1	5.8	6.0	9.9	9.4	9.7	13.4	12.8	13.2
26				6.6	6.0	6.2	10.2	9.2	9.6	13.4	13.0	13.2
27	2.2	1.6	1.8	6.8	5.8	6.2	10.3	9.2	9.7	13.3	13.0	13.0
28	2.1	1.4	1.6	6.3	5.8	6.1	10.8	9.4	10.1	13.9	13.0	13.5
29				5.8	5.5	5.6	11.9	10.2	10.9	13.8	13.4	13.6
30				6.1	5.4	5.6	12.8	11.0	12.0	13.9	13.4	13.7
31				6.1	5.4	5.7				14.2	13.6	13.8
MONTH				6.8	0.8	4.0	12.8	5.5	7.8	14.5	11.3	12.8
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBI	IR.
1	14.5	13.8	14.2	18.4	17.7	18.0	22.6	22.1	22.4	21.5	20.5	20.9
2	15.2	13.8 14.5	14.8	20.0	17.7 17.6	18.9	22.6	22.1 22.0	22.2	21.5 21.6	20.5	20.9 21.2
2 3	15.2 15.2	13.8 14.5 14.7	14.8 14.8	20.0 19.7	17.7 17.6 17.9	18.9 19.0	22.6 23.0	22.1 22.0 21.8	22.2 22.4	21.5 21.6 21.8	20.5 20.8 20.8	20.9 21.2 21.3
2 3 4	15.2 15.2 14.8	13.8 14.5 14.7 14.5	14.8 14.8 14.7	20.0 19.7 20.0	17.7 17.6 17.9 17.6	18.9 19.0 18.9	22.6 23.0 23.3	22.1 22.0 21.8 22.5	22.2 22.4 22.9	21.5 21.6 21.8 22.0	20.5 20.8 20.8 21.3	20.9 21.2 21.3 21.6
2 3	15.2 15.2	13.8 14.5 14.7	14.8 14.8	20.0 19.7	17.7 17.6 17.9	18.9 19.0	22.6 23.0	22.1 22.0 21.8	22.2 22.4	21.5 21.6 21.8	20.5 20.8 20.8	20.9 21.2 21.3
2 3 4 5	15.2 15.2 14.8 15.2	13.8 14.5 14.7 14.5 14.4	14.8 14.8 14.7 14.7	20.0 19.7 20.0 20.0	17.7 17.6 17.9 17.6 18.7	18.9 19.0 18.9 19.5	22.6 23.0 23.3 23.5	22.1 22.0 21.8 22.5 22.6	22.2 22.4 22.9 23.0	21.5 21.6 21.8 22.0 22.0	20.5 20.8 20.8 21.3 21.6	20.9 21.2 21.3 21.6 21.8
2 3 4 5	15.2 15.2 14.8 15.2	13.8 14.5 14.7 14.5 14.4	14.8 14.8 14.7 14.7	20.0 19.7 20.0 20.0	17.7 17.6 17.9 17.6 18.7	18.9 19.0 18.9 19.5	22.6 23.0 23.3 23.5	22.1 22.0 21.8 22.5 22.6	22.2 22.4 22.9 23.0	21.5 21.6 21.8 22.0 22.0	20.5 20.8 20.8 21.3 21.6	20.9 21.2 21.3 21.6 21.8
2 3 4 5 6 7	15.2 15.2 14.8 15.2 14.7 14.8	13.8 14.5 14.7 14.5 14.4	14.8 14.8 14.7 14.7	20.0 19.7 20.0 20.0	17.7 17.6 17.9 17.6 18.7	18.9 19.0 18.9 19.5	22.6 23.0 23.3 23.5 23.1 22.6	22.1 22.0 21.8 22.5 22.6 22.5 22.0	22.2 22.4 22.9 23.0 22.8 22.3	21.5 21.6 21.8 22.0 22.0 22.0	20.5 20.8 20.8 21.3 21.6 21.3 21.1	20.9 21.2 21.3 21.6 21.8
2 3 4 5 6 7 8	15.2 15.2 14.8 15.2 14.7 14.8 15.5	13.8 14.5 14.7 14.5 14.4 14.4 14.2	14.8 14.8 14.7 14.7 14.5 14.6 15.0	20.0 19.7 20.0 20.0 20.1 20.6 21.5	17.7 17.6 17.9 17.6 18.7 19.3 19.3	18.9 19.0 18.9 19.5 19.8 19.9 20.3	22.6 23.0 23.3 23.5 23.1 22.6 22.6	22.1 22.0 21.8 22.5 22.6 22.5 22.0 22.0	22.2 22.4 22.9 23.0 22.8 22.3 22.3	21.5 21.6 21.8 22.0 22.0 22.0 22.0 21.8	20.5 20.8 20.8 21.3 21.6 21.3 21.1	20.9 21.2 21.3 21.6 21.8 21.6 21.4 21.3
2 3 4 5 6 7 8 9	15.2 15.2 14.8 15.2 14.7 14.8 15.5	13.8 14.5 14.7 14.5 14.4 14.4 14.2 14.7	14.8 14.8 14.7 14.7 14.5 14.6 15.0 15.1	20.0 19.7 20.0 20.0 20.1 20.6 21.5 21.8	17.7 17.6 17.9 17.6 18.7 19.3 19.3 20.1	18.9 19.0 18.9 19.5 19.8 19.9 20.3 21.0	22.6 23.0 23.3 23.5 23.1 22.6 22.6 23.1	22.1 22.0 21.8 22.5 22.6 22.5 22.0 22.0 22.3	22.2 22.4 22.9 23.0 22.8 22.3 22.3 22.6	21.5 21.6 21.8 22.0 22.0 22.0 22.0 21.8 21.6	20.5 20.8 20.8 21.3 21.6 21.3 21.1 21.1	20.9 21.2 21.3 21.6 21.8 21.6 21.4 21.3 21.2
2 3 4 5 6 7 8	15.2 15.2 14.8 15.2 14.7 14.8 15.5	13.8 14.5 14.7 14.5 14.4 14.4 14.2	14.8 14.8 14.7 14.7 14.5 14.6 15.0	20.0 19.7 20.0 20.0 20.1 20.6 21.5	17.7 17.6 17.9 17.6 18.7 19.3 19.3	18.9 19.0 18.9 19.5 19.8 19.9 20.3	22.6 23.0 23.3 23.5 23.1 22.6 22.6	22.1 22.0 21.8 22.5 22.6 22.5 22.0 22.0 22.3	22.2 22.4 22.9 23.0 22.8 22.3 22.3	21.5 21.6 21.8 22.0 22.0 22.0 22.0 21.8	20.5 20.8 20.8 21.3 21.6 21.3 21.1 21.1	20.9 21.2 21.3 21.6 21.8 21.6 21.4 21.3
2 3 4 5 6 7 8 9	15.2 15.2 14.8 15.2 14.7 14.8 15.5 15.3	13.8 14.5 14.7 14.5 14.4 14.2 14.7 14.8 15.0	14.8 14.8 14.7 14.7 14.5 14.6 15.0 15.1 15.3	20.0 19.7 20.0 20.0 20.1 20.6 21.5 21.8 21.3	17.7 17.6 17.9 17.6 18.7 19.3 19.3 20.1 20.8	18.9 19.0 18.9 19.5 19.8 19.9 20.3 21.0 21.0	22.6 23.0 23.3 23.5 23.1 22.6 22.6 23.1 23.0	22.1 22.0 21.8 22.5 22.6 22.5 22.0 22.0 22.0	22.2 22.4 22.9 23.0 22.8 22.3 22.3 22.6 22.4	21.5 21.6 21.8 22.0 22.0 22.0 22.0 21.8 21.6 21.3	20.5 20.8 20.8 21.3 21.6 21.3 21.1 21.1 21.0 20.6	20.9 21.2 21.3 21.6 21.8 21.6 21.4 21.3 21.2 21.0
2 3 4 5 6 7 8 9 10	15.2 15.2 14.8 15.2 14.7 14.8 15.5 15.3 15.6	13.8 14.5 14.7 14.5 14.4 14.4 14.2 14.7 14.8 15.0	14.8 14.8 14.7 14.7 14.5 14.6 15.0 15.1 15.3	20.0 19.7 20.0 20.0 20.1 20.6 21.5 21.8 21.3	17.7 17.6 17.9 17.6 18.7 19.3 19.3 20.1 20.8	18.9 19.0 18.9 19.5 19.8 19.9 20.3 21.0 21.0	22.6 23.0 23.3 23.5 23.1 22.6 22.6 23.1 23.0	22.1 22.0 21.8 22.5 22.6 22.6 22.0 22.0 22.3 22.0	22.2 22.4 22.9 23.0 22.8 22.3 22.3 22.6 22.4	21.5 21.6 21.8 22.0 22.0 22.0 21.8 21.6 21.3	20.5 20.8 20.8 21.3 21.6 21.3 21.1 21.1 21.0 20.6	20.9 21.2 21.3 21.6 21.8 21.6 21.4 21.3 21.2 21.0
2 3 4 5 6 7 8 9 10	15.2 15.2 14.8 15.2 14.7 14.8 15.5 15.3 15.6	13.8 14.5 14.7 14.5 14.4 14.4 14.2 14.7 14.8 15.0	14.8 14.8 14.7 14.7 14.5 14.6 15.0 15.1 15.3	20.0 19.7 20.0 20.0 20.1 20.6 21.5 21.8 21.3	17.7 17.6 17.9 17.6 18.7 19.3 19.3 20.1 20.8	18.9 19.0 18.9 19.5 19.8 19.9 20.3 21.0 21.0	22.6 23.0 23.3 23.5 23.1 22.6 22.6 23.1 23.0	22.1 22.0 21.8 22.5 22.6 22.5 22.0 22.0 22.3 22.0	22.2 22.4 22.9 23.0 22.8 22.3 22.6 22.4 22.5 22.2	21.5 21.6 21.8 22.0 22.0 22.0 21.8 21.6 21.3	20.5 20.8 20.8 21.3 21.6 21.3 21.1 21.1 21.0 20.6 20.6	20.9 21.2 21.3 21.6 21.4 21.3 21.2 21.0
2 3 4 5 6 7 8 9 10 11 12 13	15.2 15.2 14.8 15.2 14.7 14.8 15.5 15.3 15.6 16.4 16.3	13.8 14.5 14.7 14.5 14.4 14.4 14.2 14.7 14.8 15.0	14.8 14.8 14.7 14.7 14.5 14.6 15.0 15.1 15.3	20.0 19.7 20.0 20.0 20.1 20.6 21.5 21.8 21.3 20.8 20.6 21.1	17.7 17.6 17.9 17.6 18.7 19.3 19.3 20.1 20.8 19.5 19.8 20.0	18.9 19.0 18.9 19.5 19.8 19.9 20.3 21.0 21.0 20.4 20.1 20.4	22.6 23.0 23.3 23.5 23.1 22.6 22.6 23.1 23.0 23.1 22.6 22.6	22.1 22.0 21.8 22.5 22.6 22.0 22.0 22.3 22.0 22.1 21.8 21.8	22.2 22.4 22.9 23.0 22.8 22.3 22.3 22.6 22.4 22.5 22.2	21.5 21.6 21.8 22.0 22.0 22.0 21.8 21.6 21.3 21.5 20.8 21.0	20.5 20.8 20.8 21.3 21.6 21.1 21.1 21.0 20.6 20.5 20.3	20.9 21.2 21.3 21.6 21.8 21.6 21.4 21.3 21.2 21.0 20.9 20.6 20.5
2 3 4 5 6 7 8 9 10 11 12 13	15.2 15.2 14.8 15.2 14.7 14.8 15.5 15.3 15.6	13.8 14.5 14.7 14.5 14.4 14.2 14.7 14.8 15.0	14.8 14.8 14.7 14.7 14.5 14.6 15.0 15.1 15.3 15.7 16.0	20.0 19.7 20.0 20.0 20.1 20.6 21.5 21.8 21.3 20.8 20.6 21.1	17.7 17.6 17.9 17.6 18.7 19.3 19.3 20.1 20.8 19.5 19.8	18.9 19.0 18.9 19.5 19.8 19.9 20.3 21.0 21.0 20.4 20.1 20.4 20.4	22.6 23.0 23.3 23.5 23.1 22.6 22.6 23.1 23.0 23.1 22.6 22.6	22.1 22.0 21.8 22.5 22.6 22.5 22.0 22.0 22.3 22.0 22.1 21.8 21.8 22.0	22.2 22.4 22.9 23.0 22.8 22.3 22.6 22.4 22.5 22.2 22.1 22.2	21.5 21.6 21.8 22.0 22.0 22.0 21.8 21.6 21.3 21.5 20.8 21.0	20.5 20.8 20.8 21.3 21.6 21.3 21.1 21.0 20.6 20.6 20.5 20.3 20.0	20.9 21.2 21.3 21.6 21.8 21.4 21.3 21.2 21.0 20.9 20.6 20.5 20.5
2 3 4 5 6 7 8 9 10 11 12 13	15.2 15.2 14.8 15.2 14.7 14.8 15.5 15.3 15.6 16.4 16.3	13.8 14.5 14.7 14.5 14.4 14.4 14.2 14.7 14.8 15.0	14.8 14.8 14.7 14.7 14.5 14.6 15.0 15.1 15.3	20.0 19.7 20.0 20.0 20.1 20.6 21.5 21.8 21.3 20.8 20.6 21.1	17.7 17.6 17.9 17.6 18.7 19.3 19.3 20.1 20.8 19.5 19.8 20.0	18.9 19.0 18.9 19.5 19.8 19.9 20.3 21.0 21.0 20.4 20.1 20.4	22.6 23.0 23.3 23.5 23.1 22.6 22.6 23.1 23.0 23.1 22.6 22.6	22.1 22.0 21.8 22.5 22.6 22.0 22.0 22.3 22.0 22.1 21.8 21.8	22.2 22.4 22.9 23.0 22.8 22.3 22.3 22.6 22.4 22.5 22.2	21.5 21.6 21.8 22.0 22.0 22.0 21.8 21.6 21.3 21.5 20.8 21.0	20.5 20.8 20.8 21.3 21.6 21.1 21.1 21.0 20.6 20.5 20.3	20.9 21.2 21.3 21.6 21.8 21.6 21.4 21.3 21.2 21.0 20.9 20.6 20.5
2 3 4 5 6 7 8 9 10 11 12 13 14	15.2 15.2 14.8 15.2 14.7 14.8 15.5 15.3 15.6 16.4 16.3 16.0 16.4	13.8 14.5 14.7 14.5 14.4 14.2 14.7 14.8 15.0	14.8 14.8 14.7 14.7 14.5 14.6 15.0 15.1 15.3 15.7 16.0 15.7 16.0	20.0 19.7 20.0 20.0 20.1 20.6 21.5 21.8 21.3 20.8 20.6 21.1 21.1	17.7 17.6 17.9 17.6 18.7 19.3 19.3 20.1 20.8 19.5 19.8 20.0 19.8 20.8	18.9 19.0 18.9 19.5 19.8 19.9 20.3 21.0 21.0 20.4 20.1 20.4 20.4	22.6 23.0 23.3 23.5 23.1 22.6 22.6 23.1 23.0 23.1 22.6 22.6 22.6 22.6	22.1 22.0 21.8 22.5 22.6 22.5 22.0 22.0 22.3 22.0 22.1 21.8 21.8 22.0 22.0	22.2 22.4 22.9 23.0 22.8 22.3 22.6 22.4 22.5 22.2 22.1 22.2	21.5 21.6 21.8 22.0 22.0 22.0 21.8 21.6 21.3 21.5 20.8 21.0 21.3	20.5 20.8 20.8 21.3 21.6 21.3 21.1 21.1 21.0 20.6 20.5 20.3 20.0 20.3	20.9 21.2 21.3 21.6 21.8 21.4 21.3 21.2 21.0 20.9 20.6 20.5 20.5 20.8
2 3 4 5 6 7 8 9 10 11 12 13 14 15	15.2 15.2 14.8 15.2 14.7 14.8 15.5 15.3 15.6	13.8 14.5 14.7 14.5 14.4 14.4 14.2 14.7 14.8 15.0 15.3 15.8 15.5 15.8	14.8 14.8 14.7 14.7 14.5 14.6 15.0 15.1 15.3 15.7 16.0 15.8	20.0 19.7 20.0 20.0 20.1 20.6 21.5 21.8 21.3 20.8 20.6 21.1 21.1 22.3	17.7 17.6 17.9 17.6 18.7 19.3 19.3 20.1 20.8 19.5 19.8 20.0 19.8 20.8	18.9 19.0 18.9 19.5 19.8 19.9 20.3 21.0 21.0 20.4 20.4 20.4 21.4 21.9	22.6 23.0 23.3 23.5 23.1 22.6 22.6 23.1 23.0 23.1 22.6 22.6 22.6 22.6 22.6 22.6	22.1 22.0 21.8 22.5 22.6 22.0 22.0 22.3 22.0 22.1 21.8 22.0 22.0 22.0	22.2 22.4 22.9 23.0 22.8 22.3 22.3 22.6 22.4 22.5 22.2 22.1 22.2 22.3	21.5 21.6 21.8 22.0 22.0 22.0 21.8 21.6 21.3 21.5 20.8 21.5 21.5	20.5 20.8 20.8 21.3 21.6 21.1 21.1 21.0 20.6 20.5 20.3 20.0 20.3	20.9 21.2 21.3 21.6 21.8 21.6 21.4 21.3 21.2 21.0 20.9 20.5 20.5 20.8
2 3 4 5 6 7 8 9 10 11 12 13 14 15	15.2 15.2 14.8 15.2 14.7 14.8 15.5 15.3 15.6 16.4 16.3 16.0 16.4 16.1	13.8 14.5 14.7 14.5 14.4 14.4 14.2 14.7 14.8 15.0 15.3 15.8 15.5 15.8 15.5	14.8 14.8 14.7 14.7 14.5 14.6 15.0 15.1 15.3 15.7 16.0 15.7 16.0 15.8	20.0 19.7 20.0 20.0 20.1 20.6 21.5 21.8 21.3 20.8 20.6 21.1 21.1 22.3	17.7 17.6 17.9 17.6 18.7 19.3 19.3 20.1 20.8 19.5 19.8 20.0 19.8 20.8	18.9 19.0 18.9 19.5 19.8 19.9 20.3 21.0 21.0 20.4 20.1 20.4 21.4 21.4	22.6 23.0 23.3 23.5 23.1 22.6 22.6 23.1 23.0 23.1 22.6 22.6 22.6 22.6 22.6 22.6	22.1 22.0 21.8 22.5 22.6 22.0 22.0 22.3 22.0 22.1 21.8 22.0 22.0 22.1 22.3	22.2 22.4 22.9 23.0 22.8 22.3 22.3 22.6 22.4 22.5 22.2 22.1 22.2 22.3 22.6 22.6	21.5 21.6 21.8 22.0 22.0 22.0 21.8 21.6 21.3 21.5 20.8 21.0 21.3 21.5	20.5 20.8 20.8 21.3 21.6 21.3 21.1 21.0 20.6 20.5 20.3 20.0 20.3	20.9 21.2 21.3 21.6 21.8 21.6 21.4 21.3 21.2 21.0 20.9 20.6 20.5 20.5 20.8
2 3 4 5 6 7 8 9 10 11 12 13 14 15	15.2 15.2 14.8 15.2 14.7 14.8 15.5 15.3 15.6 16.4 16.3 16.0 16.4 16.1	13.8 14.5 14.7 14.5 14.4 14.4 14.2 14.7 14.8 15.0 15.3 15.8 15.5 15.8 15.6	14.8 14.8 14.7 14.7 14.5 14.6 15.0 15.1 15.3 15.7 16.0 15.7 16.0 15.5 14.9	20.0 19.7 20.0 20.0 20.1 20.6 21.5 21.8 21.3 20.8 20.6 21.1 21.1 22.3 22.6 23.5 22.8	17.7 17.6 17.9 17.6 18.7 19.3 19.3 20.1 20.8 20.0 19.8 20.0 19.8 20.8	18.9 19.0 18.9 19.5 19.8 19.9 20.3 21.0 21.0 20.4 20.4 20.4 21.9 22.8 21.8	22.6 23.0 23.3 23.5 23.1 22.6 22.6 23.1 23.0 23.1 22.6 22.6 22.6 22.6 22.6 22.6	22.1 22.0 21.8 22.5 22.6 22.0 22.0 22.3 22.0 22.1 21.8 21.8 22.0 22.0 22.3	22.2 22.4 22.9 23.0 22.8 22.3 22.3 22.6 22.4 22.5 22.2 22.1 22.2 22.3 22.6 22.6 22.6	21.5 21.6 21.8 22.0 22.0 22.0 21.8 21.6 21.3 21.5 20.8 21.0 21.3 21.5 21.5 20.8	20.5 20.8 20.8 21.3 21.6 21.1 21.1 21.1 21.0 20.6 20.5 20.3 20.0 20.3 20.0 20.3	20.9 21.2 21.3 21.6 21.8 21.6 21.4 21.3 21.2 21.0 20.9 20.6 20.5 20.5 20.5 20.8
2 3 4 5 6 7 8 9 10 11 12 13 14 15	15.2 15.2 14.8 15.2 14.7 14.8 15.5 15.3 15.6 16.4 16.3 16.0 16.4 16.1	13.8 14.5 14.7 14.5 14.4 14.2 14.7 14.8 15.0 15.3 15.8 15.5 15.8 15.6	14.8 14.8 14.7 14.7 14.5 14.6 15.0 15.1 15.3 15.7 16.0 15.8 15.5 14.9 14.8	20.0 19.7 20.0 20.0 20.1 20.6 21.5 21.8 21.3 20.8 20.6 21.1 21.1 22.3 22.6 23.5 22.8 22.5	17.7 17.6 17.9 17.6 18.7 19.3 19.3 20.1 20.8 19.5 19.8 20.0 19.8 20.8 21.3 22.1 21.3 21.3	18.9 19.0 18.9 19.5 19.8 19.9 20.3 21.0 21.0 20.4 20.4 20.4 21.4 21.9 22.8 21.9	22.6 23.0 23.3 23.5 23.1 22.6 22.6 23.1 23.0 23.1 22.6 22.6 22.6 22.6 22.6 22.6 22.6	22.1 22.0 21.8 22.5 22.6 22.0 22.0 22.3 22.0 22.1 21.8 22.0 22.0 22.0 22.3 22.0 22.1	22.2 22.4 22.9 23.0 22.8 22.3 22.3 22.6 22.4 22.5 22.2 22.1 22.2 22.3 22.6 22.6 22.3	21.5 21.6 21.8 22.0 22.0 22.0 21.8 21.6 21.3 21.5 20.8 21.0 21.3 21.5 21.5 21.5 21.5 21.9	20.5 20.8 20.8 21.3 21.6 21.3 21.1 21.0 20.6 20.5 20.3 20.0 20.3 20.5 20.3 19.5 18.8	20.9 21.2 21.3 21.6 21.8 21.6 21.4 21.3 21.2 21.0 20.9 20.5 20.5 20.5 20.7 20.7 20.7
2 3 4 5 6 7 8 9 10 11 12 13 14 15	15.2 15.2 14.8 15.2 14.7 14.8 15.5 15.3 15.6 16.4 16.3 16.0 16.4 16.1	13.8 14.5 14.7 14.5 14.4 14.4 14.2 14.7 14.8 15.0 15.3 15.8 15.5 15.8 15.6	14.8 14.8 14.7 14.7 14.5 14.6 15.0 15.1 15.3 15.7 16.0 15.7 16.0 15.5 14.9	20.0 19.7 20.0 20.0 20.1 20.6 21.5 21.8 21.3 20.8 20.6 21.1 21.1 22.3 22.6 23.5 22.8	17.7 17.6 17.9 17.6 18.7 19.3 19.3 20.1 20.8 20.0 19.8 20.0 19.8 20.8	18.9 19.0 18.9 19.5 19.8 19.9 20.3 21.0 21.0 20.4 20.4 20.4 21.9 22.8 21.8	22.6 23.0 23.3 23.5 23.1 22.6 22.6 23.1 23.0 23.1 22.6 22.6 22.6 22.6 22.6 22.6	22.1 22.0 21.8 22.5 22.6 22.0 22.0 22.3 22.0 22.1 21.8 21.8 22.0 22.0 22.3	22.2 22.4 22.9 23.0 22.8 22.3 22.3 22.6 22.4 22.5 22.2 22.1 22.2 22.3 22.6 22.6 22.6	21.5 21.6 21.8 22.0 22.0 22.0 21.8 21.6 21.3 21.5 20.8 21.0 21.3 21.5 21.5 20.8	20.5 20.8 20.8 21.3 21.6 21.1 21.1 21.1 21.0 20.6 20.5 20.3 20.0 20.3 20.0 20.3	20.9 21.2 21.3 21.6 21.8 21.6 21.4 21.3 21.2 21.0 20.9 20.6 20.5 20.5 20.5 20.8
2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20	15.2 15.2 14.8 15.2 14.7 14.8 15.5 15.3 15.6 16.4 16.3 16.0 16.4 16.1	13.8 14.5 14.7 14.5 14.4 14.2 14.7 14.8 15.0 15.3 15.8 15.5 15.8 15.6 14.7 14.7	14.8 14.8 14.7 14.7 14.5 14.6 15.0 15.1 15.3 15.7 16.0 15.7 16.0 15.5 14.9 14.8 14.8	20.0 19.7 20.0 20.0 20.0 20.1 20.6 21.5 21.8 21.3 20.6 21.1 22.3 22.3 22.6 23.5 22.8 22.5 22.0	17.7 17.6 17.9 17.6 18.7 19.3 19.3 20.1 20.8 20.0 19.8 20.0 19.8 21.3 22.1 21.3 21.3 21.5	18.9 19.0 18.9 19.5 19.8 19.9 20.3 21.0 20.4 20.1 20.4 21.4 21.4 21.9 22.8 21.8 21.9	22.6 23.0 23.3 23.5 23.1 22.6 22.6 23.1 23.0 23.1 22.6 22.6 22.6 22.6 22.6 22.6 22.6 22	22.1 22.0 21.8 22.5 22.6 22.0 22.0 22.3 22.0 22.1 21.8 21.8 22.0 22.0 22.3 22.0 22.1	22.2 22.4 22.9 23.0 22.8 22.3 22.3 22.4 22.5 22.2 22.1 22.2 22.3 22.6 22.6 22.3 22.1	21.5 21.6 21.8 22.0 22.0 22.0 21.8 21.6 21.3 21.5 20.8 21.0 21.3 21.5 21.5 21.5 21.5	20.5 20.8 20.8 21.3 21.6 21.1 21.1 21.1 21.0 20.6 20.5 20.3 20.0 20.3 20.0 20.3 19.5 18.8 18.4	20.9 21.2 21.3 21.6 21.8 21.4 21.3 21.2 21.0 20.9 20.5 20.5 20.8 20.9 20.7 20.1 19.2
2 3 4 5 6 7 8 9 10 11 12 13 14 15	15.2 15.2 14.8 15.2 14.7 14.8 15.5 15.3 15.6 16.4 16.3 16.0 16.4 16.1	13.8 14.5 14.7 14.5 14.4 14.2 14.7 14.8 15.0 15.3 15.8 15.5 15.8 15.6	14.8 14.8 14.7 14.7 14.5 14.6 15.0 15.1 15.3 15.7 16.0 15.8 15.5 14.9 14.8 14.8 14.9	20.0 19.7 20.0 20.0 20.1 20.6 21.5 21.8 21.3 20.6 21.1 21.1 22.3 22.6 23.5 22.8 22.5 22.0	17.7 17.6 17.9 17.6 18.7 19.3 19.3 20.1 20.8 19.5 19.8 20.0 19.8 20.8 21.3 22.1 21.3 21.3 21.5	18.9 19.0 18.9 19.5 19.8 19.9 20.3 21.0 21.0 20.4 20.1 20.4 21.4 21.9 22.8 21.8 21.9 21.8	22.6 23.0 23.3 23.5 23.1 22.6 22.6 23.1 23.0 23.1 22.6 22.6 22.6 22.6 22.6 22.6 22.5 22.1	22.1 22.0 21.8 22.5 22.6 22.0 22.0 22.3 22.0 22.1 21.8 22.0 22.0 22.3 22.0 22.1 21.8 21.8 22.0 22.0	22.2 22.4 22.9 23.0 22.8 22.3 22.6 22.4 22.5 22.2 22.1 22.2 22.3 22.6 22.6 22.6 22.8	21.5 21.6 21.8 22.0 22.0 22.0 21.8 21.6 21.3 21.5 20.8 21.0 21.3 21.5 21.5 21.5 21.5 21.3	20.5 20.8 20.8 21.3 21.6 21.1 21.1 21.0 20.6 20.5 20.3 20.0 20.3 20.0 20.3 20.5 20.3 21.5 20.5 20.5 20.5 20.5 20.5 20.5 20.5 20	20.9 21.2 21.3 21.6 21.8 21.4 21.3 21.2 21.0 20.9 20.5 20.5 20.5 20.7 20.7 20.1 19.2 18.7
2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20	15.2 15.2 14.8 15.2 14.8 15.5 15.3 15.6 16.4 16.3 16.0 16.4 16.1	13.8 14.5 14.7 14.5 14.4 14.2 14.7 14.8 15.0 15.3 15.8 15.5 15.8 15.6	14.8 14.8 14.7 14.7 14.5 14.6 15.0 15.1 15.3 15.7 16.0 15.8 15.5 14.9 14.8 14.8 14.9	20.0 19.7 20.0 20.0 20.1 20.6 21.5 21.8 21.3 20.8 20.6 21.1 21.1 22.3 22.6 23.5 22.8 22.5 22.0	17.7 17.6 17.9 17.6 18.7 19.3 19.3 20.1 20.8 20.0 19.8 20.0 19.8 21.3 22.1 21.3 21.3 21.5	18.9 19.0 18.9 19.5 19.8 19.9 20.3 21.0 21.0 20.4 20.1 20.4 21.4 21.4 21.8 21.8 21.8 21.8 21.8	22.6 23.0 23.3 23.5 23.1 22.6 22.6 23.1 23.0 23.1 22.6 22.6 22.6 22.6 22.6 22.6 22.6 22	22.1 22.0 21.8 22.5 22.6 22.0 22.0 22.3 22.0 22.1 21.8 21.8 22.0 22.0 22.3 22.0 22.1	22.2 22.4 22.9 23.0 22.8 22.3 22.3 22.4 22.5 22.2 22.1 22.2 22.3 22.6 22.6 22.3 22.1	21.5 21.6 21.8 22.0 22.0 22.0 21.8 21.6 21.3 21.5 20.8 21.0 21.3 21.5 21.5 21.5 21.5	20.5 20.8 20.8 21.3 21.6 21.3 21.1 21.1 21.0 20.6 20.5 20.3 20.0 20.3 20.0 3 20.5 18.8 18.4 17.4 17.9	20.9 21.2 21.3 21.6 21.8 21.4 21.3 21.2 21.0 20.9 20.6 20.5 20.5 20.5 20.5 20.5 20.5 20.5 20.7 20.9 20.7 20.1 19.2 21.7
2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20	15.2 15.2 14.8 15.2 14.7 14.8 15.5 15.3 15.6 16.4 16.3 16.0 16.4 16.1 15.6 15.2 15.2 15.0 15.5	13.8 14.5 14.7 14.5 14.4 14.2 14.7 14.8 15.0 15.3 15.8 15.5 15.8 15.5 14.8 14.7 14.7	14.8 14.8 14.7 14.7 14.5 14.6 15.0 15.1 15.3 15.7 16.0 15.8 15.5 14.9 14.8 14.8 14.9	20.0 19.7 20.0 20.0 20.1 20.6 21.5 21.8 21.3 20.6 21.1 22.3 22.6 23.5 22.8 22.5 22.0 23.0 23.3 23.3	17.7 17.6 17.9 17.6 18.7 19.3 19.3 20.1 20.8 20.0 19.8 20.0 19.8 20.8 21.3 22.1 21.3 21.3 21.5 21.8	18.9 19.0 18.9 19.5 19.8 19.9 20.3 21.0 21.0 20.4 20.1 20.4 21.4 21.9 22.8 21.8 21.9 21.8	22.6 23.0 23.3 23.5 23.1 22.6 22.6 23.1 23.0 23.1 22.6 22.6 22.6 22.6 22.6 22.6 22.6 22	22.1 22.0 21.8 22.5 22.6 22.0 22.0 22.3 22.0 22.1 21.8 22.0 22.0 22.3 22.0 22.3 22.3 22.5 21.5	22.2 22.4 22.9 23.0 22.8 22.3 22.3 22.6 22.4 22.5 22.2 22.1 22.2 22.3 22.6 22.6 22.3 22.1 21.8	21.5 21.6 21.8 22.0 22.0 22.0 21.8 21.6 21.3 21.5 20.8 21.0 21.3 21.5 21.5 21.3 21.5 21.3	20.5 20.8 20.8 21.3 21.6 21.1 21.1 21.0 20.6 20.5 20.3 20.0 20.3 20.0 20.3 20.5 20.3 21.5 20.5 20.5 20.5 20.5 20.5 20.5 20.5 20	20.9 21.2 21.3 21.6 21.8 21.6 21.4 21.3 21.2 21.0 20.9 20.5 20.5 20.5 20.5 20.5 20.5 20.5 20.5
2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20	15.2 15.2 14.8 15.2 14.7 14.8 15.5 15.3 15.6 16.4 16.3 16.0 16.4 16.1 15.6 15.2 15.2 15.2 15.3	13.8 14.5 14.7 14.5 14.4 14.2 14.7 14.8 15.0 15.3 15.8 15.5 15.8 15.6 15.2 14.8 14.7 14.7 14.7 14.5	14.8 14.8 14.7 14.7 14.5 14.6 15.0 15.1 15.3 15.7 16.0 15.7 16.0 15.8 15.5 14.9 14.8 14.8 14.9 15.5 15.5 16.5	20.0 19.7 20.0 20.0 20.1 20.6 21.5 21.8 20.6 21.1 21.1 22.3 22.6 23.5 22.8 22.5 22.0 23.0 23.3 23.3	17.7 17.6 17.9 17.6 18.7 19.3 19.3 20.1 20.8 19.5 19.8 20.0 19.8 20.8 21.3 22.1 21.3 21.3 21.3 21.3 22.1 22.0 22.6	18.9 19.0 18.9 19.5 19.8 19.9 20.3 21.0 21.0 20.4 20.4 21.4 21.4 21.8 21.8 21.8 21.8 22.3 22.6 22.5 22.8	22.6 23.0 23.3 23.5 23.1 22.6 22.6 22.6 22.6 22.6 22.6 22.6 22	22.1 22.0 21.8 22.5 22.6 22.0 22.3 22.0 22.3 22.0 22.1 21.8 21.8 22.0 22.0 22.1 21.8 21.8 21.8 21.8 22.0 22.0	22.2 22.4 22.9 23.0 22.8 22.3 22.6 22.4 22.5 22.2 22.1 22.2 22.3 22.6 22.6 22.6 22.8 22.1 21.8 21.8	21.5 21.6 21.8 22.0 22.0 22.0 21.8 21.6 21.3 21.5 20.8 21.3 21.5 21.5 21.5 21.5 21.5 21.5 21.5 21.5	20.5 20.8 20.8 21.3 21.6 21.1 21.1 21.0 20.6 20.5 20.3 20.0 20.3 20.0 20.3 20.5 20.3 21.1 21.1 21.1 21.1 21.1 21.1 21.1 21	20.9 21.2 21.3 21.6 21.8 21.4 21.3 21.2 21.0 20.9 20.5 20.5 20.5 20.7 20.7 20.1 19.2 18.7
2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24	15.2 15.2 14.8 15.2 14.7 14.8 15.5 15.3 15.6 16.4 16.3 16.0 16.4 16.1 15.6 15.2 15.2 15.0 15.5	13.8 14.5 14.7 14.5 14.4 14.2 14.7 14.8 15.0 15.3 15.8 15.6 15.2 14.8 14.7 14.7 14.5	14.8 14.8 14.7 14.7 14.5 14.6 15.0 15.1 15.3 15.7 16.0 15.7 16.0 15.8 15.5 14.9 14.8 14.8 14.8 14.9	20.0 19.7 20.0 20.0 20.1 20.6 21.5 21.8 21.3 20.6 21.1 22.3 22.6 23.5 22.8 22.5 22.0 23.0 23.3 23.3	17.7 17.6 17.9 17.6 18.7 19.3 19.3 20.1 20.8 20.0 19.8 20.0 19.8 21.3 22.1 21.3 21.5 21.3 22.1 22.1 22.2	18.9 19.0 18.9 19.5 19.8 19.9 20.3 21.0 20.4 20.1 20.4 21.4 21.9 22.8 21.8 21.9 21.8 22.3 22.6 22.5	22.6 23.0 23.3 23.5 23.1 22.6 22.6 23.1 23.0 23.1 22.6 22.6 22.6 22.6 22.6 22.5 22.1	22.1 22.0 21.8 22.5 22.6 22.0 22.0 22.3 22.0 22.1 21.8 21.8 22.0 22.0 22.1 21.8 21.8 21.8 22.0 22.0 22.1	22.2 22.4 22.9 23.0 22.8 22.3 22.6 22.4 22.5 22.2 22.1 22.2 22.3 22.6 22.6 22.3 22.1 21.8	21.5 21.6 21.8 22.0 22.0 22.0 21.8 21.6 21.3 21.5 20.8 21.0 21.3 21.5 21.5 21.5 21.5 21.3 21.5 21.5 21.8 21.6 21.3	20.5 20.8 20.8 21.3 21.6 21.1 21.1 21.0 20.6 20.5 20.3 20.0 20.3 20.0 20.3 19.5 18.8 18.4 17.4 17.9 17.6	20.9 21.2 21.3 21.6 21.8 21.6 21.4 21.3 21.2 21.0 20.9 20.5 20.5 20.5 20.5 20.5 20.5 20.5 20.5
2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24	15.2 15.2 14.8 15.2 14.7 14.8 15.5 15.3 15.6 16.4 16.3 16.0 16.4 16.1 15.6 15.2 15.2 15.2 15.3	13.8 14.5 14.7 14.5 14.4 14.2 14.7 14.8 15.0 15.3 15.8 15.6 15.2 14.8 14.7 14.7 14.5	14.8 14.8 14.7 14.7 14.5 14.6 15.0 15.1 15.3 15.7 16.0 15.7 16.0 15.8 15.5 14.9 14.8 14.8 14.9 15.5 15.5 16.5	20.0 19.7 20.0 20.0 20.1 20.6 21.5 21.8 20.6 21.1 21.1 22.3 22.6 23.5 22.8 22.5 22.0 23.0 23.3 23.3	17.7 17.6 17.9 17.6 18.7 19.3 19.3 20.1 20.8 19.5 19.8 20.0 19.8 20.8 21.3 22.1 21.3 21.3 21.3 21.3 22.1 22.0 22.6	18.9 19.0 18.9 19.5 19.8 19.9 20.3 21.0 21.0 20.4 20.4 21.4 21.4 21.8 21.8 21.8 21.8 22.3 22.6 22.5 22.8	22.6 23.0 23.3 23.5 23.1 22.6 22.6 23.1 23.0 23.1 22.6 22.6 22.6 22.6 22.6 22.5 22.1	22.1 22.0 21.8 22.5 22.6 22.0 22.3 22.0 22.3 22.0 22.1 21.8 21.8 22.0 22.0 22.1 21.8 21.8 21.8 21.8 22.0 22.0	22.2 22.4 22.9 23.0 22.8 22.3 22.6 22.4 22.5 22.2 22.1 22.2 22.3 22.6 22.6 22.6 22.8 22.1 21.8 21.8	21.5 21.6 21.8 22.0 22.0 22.0 21.8 21.6 21.3 21.5 20.8 21.0 21.3 21.5 21.5 21.5 21.5 21.3 21.5 21.5 21.8 21.6 21.3	20.5 20.8 20.8 21.3 21.6 21.1 21.1 21.0 20.6 20.5 20.3 20.0 20.3 20.0 20.3 20.5 20.3 21.1 21.1 21.1 21.1 21.1 21.1 21.1 21	20.9 21.2 21.3 21.6 21.8 21.4 21.3 21.2 21.0 20.9 20.5 20.5 20.5 20.7 20.7 20.1 19.2 18.7
2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25	15.2 15.2 14.8 15.2 14.7 14.8 15.5 15.3 15.6 16.4 16.3 16.0 16.4 16.1 15.6 15.2 15.2 15.0 15.5	13.8 14.5 14.7 14.5 14.4 14.2 14.7 14.8 15.0 15.3 15.8 15.5 15.8 14.7 14.7 14.7 14.5 15.0 16.0 16.0	14.8 14.8 14.7 14.7 14.5 14.6 15.0 15.1 15.3 15.7 16.0 15.8 15.5 14.9 14.8 14.8 14.9 15.5 15.5 16.9	20.0 19.7 20.0 20.0 20.0 20.1 20.6 21.5 21.8 21.3 20.6 21.1 22.3 22.6 23.5 22.8 22.5 22.0 23.0 23.0 23.1 23.1 23.6	17.7 17.6 17.9 17.6 18.7 19.3 19.3 20.1 20.8 20.0 19.8 20.0 19.8 21.3 22.1 21.3 21.5 21.3 22.1 22.6 22.6	18.9 19.0 18.9 19.5 19.8 19.9 20.3 21.0 20.4 20.1 20.4 21.4 21.9 22.8 21.8 21.9 22.8 22.5 22.5 22.8 23.1	22.6 23.0 23.3 23.5 23.1 22.6 22.6 22.6 22.6 22.6 22.6 22.6 22	22.1 22.0 21.8 22.5 22.6 22.0 22.0 22.3 22.0 22.1 21.8 21.8 22.0 22.0 22.3 22.0 21.8 21.5 21.0 22.0	22.2 22.4 22.9 23.0 22.8 22.3 22.6 22.4 22.5 22.2 22.1 22.2 22.3 22.6 22.6 22.3 22.1 21.8 21.4 21.4 21.1 20.8 20.8	21.5 21.6 21.8 22.0 22.0 22.0 21.8 21.6 21.3 21.5 20.8 21.3 21.5 21.5 21.5 21.5 21.5 21.5 21.5 21.5	20.5 20.8 20.8 21.3 21.6 21.1 21.1 21.1 21.0 20.6 20.5 20.3 20.0 20.3 20.0 3 20.5 20.3 19.5 18.8 18.4 17.4 17.9 17.6 17.4 17.2	20.9 21.2 21.3 21.6 21.8 21.4 21.3 21.2 21.0 20.9 20.5 20.5 20.5 20.8 20.9 20.7 20.1 19.2 18.7 18.2 18.7 17.9 17.5
2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25	15.2 15.2 14.8 15.2 14.7 14.8 15.5 15.3 15.6 16.4 16.3 16.0 16.4 16.1 15.6 15.2 15.2 15.2 15.3 15.6	13.8 14.5 14.7 14.5 14.4 14.2 14.7 14.8 15.0 15.3 15.8 15.6 15.2 14.8 14.7 14.7 14.7 14.5	14.8 14.8 14.7 14.7 14.5 14.6 15.0 15.1 15.3 15.7 16.0 15.7 16.0 15.5 14.9 14.8 14.8 14.9 15.5 15.5 15.5 16.9	20.0 19.7 20.0 20.0 20.0 20.1 20.6 21.5 21.8 20.6 21.1 21.1 22.3 22.6 23.5 22.8 22.5 22.0 23.0 23.1 23.1 23.6	17.7 17.6 17.9 17.6 18.7 19.3 19.3 20.1 20.8 19.5 19.8 20.0 19.8 20.8 21.3 22.1 21.3 21.3 21.3 22.1 22.6 22.6 22.6	18.9 19.0 18.9 19.5 19.8 19.9 20.3 21.0 21.0 20.4 20.4 20.4 21.4 21.9 22.8 21.8 21.8 21.8 22.5 22.5 22.8 23.1	22.6 23.0 23.3 23.5 23.1 22.6 22.6 22.6 22.6 22.6 22.6 22.6 22	22.1 22.0 21.8 22.5 22.6 22.0 22.3 22.0 22.3 22.0 22.1 21.8 22.0 22.0 22.3 22.0 22.1 21.8 21.8 22.0 22.0 22.0 22.0 22.0 20.0 20.0 20	22.2 22.4 22.9 23.0 22.8 22.3 22.3 22.4 22.5 22.2 22.1 22.2 22.3 22.1 21.8 21.4 21.2 20.8 20.8	21.5 21.6 21.8 22.0 22.0 22.0 21.8 21.6 21.3 21.5 20.8 21.0 21.3 21.5 21.5 21.5 21.5 21.5 21.5 21.5 21.5	20.5 20.8 20.8 21.3 21.6 21.1 21.1 21.0 20.6 20.5 20.3 20.0 20.3 20.0 20.3 19.5 18.8 18.4 17.4 17.6 17.4 17.2	20.9 21.2 21.3 21.6 21.8 21.4 21.3 21.2 21.0 20.9 20.5 20.5 20.5 20.5 20.5 20.5 20.7 20.1 19.2 18.7 18.2 17.9 17.5
2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27	15.2 15.2 14.8 15.2 14.8 15.5 15.3 15.6 16.4 16.3 16.0 16.4 16.1 15.6 15.2 15.2 15.2 15.2 15.3	13.8 14.5 14.7 14.5 14.4 14.2 14.7 14.8 15.0 15.3 15.8 15.5 14.8 14.7 14.7 14.7 14.5	14.8 14.8 14.7 14.7 14.5 14.6 15.0 15.1 15.3 15.7 16.0 15.8 15.5 14.9 14.8 14.8 14.9 15.5 15.5 16.9 16.9	20.0 19.7 20.0 20.0 20.1 20.6 21.5 21.8 21.3 20.8 20.6 21.1 21.1 22.3 22.6 23.5 22.8 22.5 22.0 23.0 23.3 23.1 23.6	17.7 17.6 17.9 17.6 18.7 19.3 19.3 20.1 20.8 20.0 19.8 20.0 19.8 21.3 22.1 21.3 21.3 21.3 21.5 21.8 22.1 22.0 22.6 22.6	18.9 19.0 18.9 19.5 19.8 19.9 20.3 21.0 21.0 20.4 20.1 20.4 21.4 21.8 21.8 21.8 22.6 22.5 22.8 23.1	22.6 23.0 23.3 23.5 23.1 22.6 22.6 22.6 22.6 22.6 22.6 22.6 22	22.1 22.0 21.8 22.5 22.6 22.0 22.0 22.3 22.0 22.1 21.8 22.0 22.0 22.3 22.3 22.0 21.8 21.5 21.0 21.0 20.0 20.0 20.0 20.0 20.0 20.0	22.2 22.4 22.9 23.0 22.8 22.3 22.6 22.4 22.5 22.2 22.1 22.2 22.3 22.1 21.8 21.4 21.2 21.1 20.8 20.8 20.8	21.5 21.6 21.8 22.0 22.0 22.0 21.8 21.6 21.3 21.5 20.8 21.0 21.3 21.5 21.3 20.5 19.5 19.5 19.5 19.2	20.5 20.8 20.8 21.3 21.6 21.3 21.1 21.0 20.6 20.5 20.3 20.0 20.3 20.0 3 20.5 18.8 18.4 17.4 17.9 17.6 17.6 17.6 17.6	20.9 21.2 21.3 21.6 21.8 21.4 21.3 21.2 21.0 20.9 20.6 20.5 20.5 20.5 20.7 20.1 19.2 18.2 17.9 17.9 17.5
2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28	15.2 15.2 14.8 15.2 14.7 14.8 15.5 15.3 15.6 16.4 16.3 16.0 16.4 16.1 15.6 15.2 15.2 15.2 15.3 17.1 17.4 17.4	13.8 14.5 14.7 14.5 14.4 14.2 14.7 14.8 15.0 15.3 15.8 15.5 15.8 14.7 14.7 14.7 14.5 15.0 16.0 16.0 16.6 16.6	14.8 14.8 14.7 14.7 14.5 14.6 15.0 15.1 15.3 15.7 16.0 15.8 15.5 14.9 14.8 14.8 14.8 14.9 15.5 16.5 16.5 16.5 16.5	20.0 19.7 20.0 20.0 20.1 20.6 21.5 21.8 21.3 20.8 20.6 21.1 21.1 22.3 22.6 23.5 22.8 22.5 22.0 23.0 23.3 23.1 23.1 23.6	17.7 17.6 17.9 17.6 18.7 19.3 19.3 20.1 20.8 20.0 19.8 20.0 19.8 21.3 22.1 21.3 21.5 21.3 22.1 22.0 22.6 22.6 22.0 22.0	18.9 19.0 18.9 19.5 19.8 19.9 20.3 21.0 20.4 20.1 20.4 21.4 21.4 21.9 22.8 21.8 21.9 22.8 21.8 22.5 22.5 22.8 23.1	22.6 23.0 23.3 23.5 23.1 22.6 22.6 22.6 22.6 22.6 22.6 22.6 22	22.1 22.0 21.8 22.5 22.6 22.0 22.0 22.3 22.0 22.1 21.8 21.8 22.0 22.0 22.3 22.0 21.8 21.5 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20	22.2 22.4 22.9 23.0 22.8 22.3 22.6 22.2 22.1 22.2 22.3 22.6 22.6 22.3 22.1 21.1 20.8 20.8	21.5 21.6 21.8 22.0 22.0 22.0 21.8 21.6 21.3 21.5 20.8 21.3 21.5 21.5 21.5 21.5 21.5 21.5 21.5 21.5	20.5 20.8 20.8 21.3 21.6 21.3 21.1 21.1 21.0 20.6 20.5 20.3 20.0 20.3 20.5 20.3 20.5 19.5 18.8 18.4 17.4 17.9 17.6 17.4 17.2	20.9 21.2 21.3 21.6 21.8 21.4 21.3 21.2 21.0 20.9 20.6 20.5 20.5 20.8 20.9 20.7 20.1 19.2 18.7 18.2 17.9 17.9 17.5
2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29	15.2 15.2 14.8 15.2 14.7 14.8 15.5 15.3 15.6 16.4 16.3 16.0 16.4 16.1 15.6 15.2 15.2 15.2 15.3 17.4 17.4 17.4	13.8 14.5 14.7 14.5 14.4 14.2 14.7 14.8 15.0 15.3 15.8 15.6 15.2 14.8 14.7 14.7 14.7 14.5 14.8 15.0 16.0 16.0 16.4	14.8 14.8 14.7 14.7 14.5 14.6 15.0 15.1 15.3 15.7 16.0 15.7 16.0 15.5 14.9 14.8 14.8 14.9 15.5 15.5 16.9 16.9 16.9 16.9	20.0 19.7 20.0 20.0 20.0 20.1 20.6 21.5 21.8 21.3 20.6 21.1 21.1 22.3 22.6 23.5 22.8 22.5 22.0 23.0 23.3 23.1 23.6 23.0 23.0 23.0 23.0 23.0	17.7 17.6 17.9 17.6 18.7 19.3 19.3 20.1 20.8 20.0 19.8 20.0 19.8 21.3 22.1 21.3 21.3 21.3 22.6 22.6 22.6 22.0 22.0 22.0 22.8	18.9 19.0 18.9 19.5 19.8 19.9 20.3 21.0 21.0 20.4 20.1 20.4 21.4 21.9 22.8 21.8 21.8 22.5 22.5 22.8 23.1	22.6 23.0 23.3 23.5 23.1 22.6 22.6 22.6 22.6 22.6 22.6 22.6 22	22.1 22.0 21.8 22.5 22.6 22.0 22.0 22.3 22.0 22.1 21.8 22.0 22.0 22.3 22.0 22.1 21.8 21.8 22.0 22.0 22.0 22.3 22.0 22.0 22.0 22.0	22.2 22.4 22.9 23.0 22.8 22.3 22.3 22.6 22.4 22.5 22.2 22.1 22.2 22.3 22.1 21.8 21.4 21.2 20.8 20.8 20.8	21.5 21.6 21.8 22.0 22.0 22.0 21.8 21.6 21.3 21.5 20.8 21.0 21.3 21.5 21.5 21.5 21.5 21.5 21.5 21.5 21.5	20.5 20.8 20.8 21.3 21.6 21.1 21.1 21.0 20.6 20.5 20.3 20.0 20.3 20.5 20.3 20.5 20.3 21.1 21.1 21.1 21.1 21.1 21.1 21.1 21	20.9 21.2 21.3 21.6 21.8 21.4 21.3 21.2 21.0 20.9 20.5 20.5 20.5 20.5 20.1 19.2 18.7 18.2 17.9 17.5 17.3 17.3 17.3 17.3
2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30	15.2 15.2 14.8 15.2 14.8 15.5 15.3 15.6 16.4 16.3 16.0 16.4 16.1 15.6 15.2 15.2 15.2 15.2 15.3 17.1 17.4 17.4 17.4	13.8 14.5 14.7 14.5 14.4 14.2 14.7 14.8 15.0 15.3 15.8 15.5 14.8 14.7 14.7 14.7 14.5	14.8 14.8 14.7 14.7 14.5 14.6 15.0 15.1 15.3 15.7 16.0 15.8 15.5 14.9 14.8 14.9 15.5 15.5 16.9 16.9 16.9 17.1 17.1 17.1	20.0 19.7 20.0 20.0 20.1 20.6 21.5 21.8 21.3 20.8 20.6 21.1 21.1 22.3 22.6 23.5 22.8 22.5 22.0 23.3 23.1 23.6 23.6 23.5	17.7 17.6 17.9 17.6 18.7 19.3 19.3 20.1 20.8 20.0 19.8 20.0 21.3 22.1 21.3 21.3 21.3 21.5 22.1 22.0 22.6 22.6 22.0 22.0 22.8	18.9 19.0 18.9 19.5 19.8 19.9 20.3 21.0 21.0 20.4 20.1 20.4 21.4 21.8 21.8 21.8 22.6 22.5 22.8 23.1	22.6 23.0 23.3 23.5 23.1 22.6 22.6 22.6 22.6 22.6 22.6 22.6 22	22.1 22.0 21.8 22.5 22.0 22.0 22.3 22.0 22.3 22.0 22.1 21.8 22.0 22.3 22.3 22.0 21.8 21.5 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20	22.2 22.4 22.9 23.0 22.8 22.3 22.6 22.4 22.5 22.2 22.1 22.2 22.3 22.1 21.8 21.4 21.2 21.1 20.8 20.8 20.8 20.8 20.8 20.7	21.5 21.6 21.8 22.0 22.0 22.0 21.8 21.6 21.3 21.5 20.8 21.0 21.3 21.5 21.3 20.5 19.5 19.5 19.5 19.5 19.7 18.5 18.7 18.5 18.0	20.5 20.8 20.8 21.3 21.6 21.3 21.1 21.0 20.6 20.5 20.3 20.0 20.3 20.0 20.3 19.5 18.8 18.4 17.4 17.9 17.6 17.6 17.6 17.6 17.6 17.6 17.6	20.9 21.2 21.3 21.6 21.8 21.4 21.3 21.2 21.0 20.9 20.6 20.5 20.5 20.5 20.5 20.7 20.1 19.2 18.7 19.2 17.9 17.9 17.5 17.3 17.3 17.3 17.3 17.4

SNAKE RIVER MAIN STEM

13081500 SNAKE RIVER NEAR MINIDOKA, ID--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1989 to 1996, February to September 1998, April to September 2000 (discontinued). PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: June to September 1993, June to September 1994, July to September 1996, February to September 1998, May to September 2000 (discontinued).

INSTRUMENTATION .-- Temperature recording data logger.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum, 24.0 °C Aug. 3-5, 1994.

EXTREMES FOR CURRENT YEAR .--

WATER TEMPERATURE: Maximum, 23.4 °C July 30, 31, Aug. 3-5.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	CON- DUCT- (ANCE (US/CM)	PH WATER WHOLE FIELD STAND- ARD UNITS) 00400)	TEMPER- ATURE AIR (DEG C) (00020)	TEMPER- ATURE WATER (DEG C) (00010)	TUR- BID- ITY (NTU) (00076)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (00301)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)
APR 05 MAY	0930	7080	446	8.0	7.5	7.7	5.5	11.8	114	K20	68
08 JUN	0930	7050	426	8.5	11.0	11.9	2.0	9.0	94	K3	K18
08 JUL	0900	8970	413	8.7	18.5	15.3	1.4	9.1	107	K4	46
18 AUG	0915	10600	410	8.6	20.0	18.1	2.1	8.8	108	К5	K8
16	0915	9820	416	8.2	20.0	16.8	3.2	6.3	75	27	29
SEP 13	1315	6250	434	8.4	32.0	17.4	.6	12.1	146	24	K12
DATE		HARD- NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	S(PE	DDIUM RCENT 0932)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ANC WATER UNFLTRD FET FIELD MG/L AS HCO3 (00440)	ANC UNFLTRD CARB FET FIELD MG/L AS CO3 (00445)	
SEP 13.		170	44.2	15.2	19.0	1	19	3.4	200	2	
DATE		ANC WATER UNFLTRD FET FIELD MG/L AS CACO3 (00410)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	I S0 (LICA, DIS- DLVED MG/L AS IO2) 0955)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)	SOLIDS, DIS- SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS- SOLVED (TONS PER DAY) (70302)	
SEP		160	40.0	10.0		,	22.5	0.65	26	4470	
13.	• •	167	40.0	18.8	.7	4	22.5	265	.36	4470	
	DATE	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	(MC	,AM- IA + ANIC FAL G/L N)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	MH S PE (M	EDI- ENT, C US- NDED F	SEDI- MENT, DIS- HARGE, SUS- 'ENDED I/DAY) 80155)	
	APR 05	.119	<.002		.48	.034	.003	12		229	
	MAY	<.005								95	
	JUN		<.002 .005		. 28	.027	.001				
	08 JUL 18	.010	.005		. 26	.029	.006			73 86	
	AUG 16	.055	.025		.33	.096	.020			186	
	SEP 13	.116	.023		.50	.091	.039			135	

K Results based on counts outside ideal colony range.

13081500 SNAKE RIVER NEAR MINIDOKA, ID--Continued

WATER TEMPERATURE, DEGREES CELSIUS, MAY TO SEPTEMBER 2000

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN
		APRIL			MAY	
1						
2						
3						
4						
5						
6						
7						
8						
9				13.3	12.4	12.7
10				13.3	12.1	12.7
11				12.4	11.5	12.0
12				11.8	11.1	11.4
13				12.2	11.0	11.5
14				13.0	11.5	12.1
15				12.7	11.6	12.0
16				13.3	12.2	12.7
17				12.8	12.1	12.3
18				13.2	12.1	12.5
19				13.3	12.2	12.8
20				13.9	12.8	13.4
21				14.5	13.5	13.9
22				15.0	13.8	14.4
23				15.6	14.5	15.1
24				16.0	15.3	15.6
25				16.6	15.5	15.8
26				16.6	15.3	15.9
27				17.1	15.6	16.3
28				16.4	15.8	16.1
29				16.4	15.3	15.9
30				17.4	15.3	16.2
31				16.6	15.3	15.9
MONTH						

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST		S	EPTEMBE	R
1	16.8	15.5	16.1	20.1	19.5	19.8	22.6	22.1	22.3	20.4	19.8	20.1
2	17.2	16.0	16.4	20.3	19.5	19.8	22.9	22.1	22.5	19.8	19.2	19.6
3	16.4	15.6	15.9	20.3	19.8	20.0	23.4	22.4	22.9	19.3	18.8	19.1
4	17.5	15.6	16.5	20.0	19.3	19.6	23.4	22.8	23.0	19.3	18.5	18.9
5	17.9	16.6	17.2	20.0	19.0	19.5	23.4	22.8	23.0	18.8	17.7	18.3
6	17.4	16.4	16.8	19.5	19.0	19.2	23.1	22.4	22.8	18.0	17.4	17.7
7	18.2	16.9	17.6	19.5	19.0	19.2	22.9	22.1	22.5	18.2	17.1	17.5
8	18.2	17.5	17.7	19.5	18.8	19.3	22.8	21.9	22.3	18.0	17.1	17.4
9	18.0	17.4	17.7	19.5	18.5	19.1	23.3	22.3	22.8	17.2	16.3	16.8
10	18.0	17.2	17.5	20.0	19.3	19.6	23.3	22.4	22.8	17.2	16.3	16.6
11	18.0	17.1	17.5	20.4	19.6	20.0	22.4	21.8	22.1	17.1	16.1	16.5
12	17.4	16.4	17.0	20.8	20.1	20.5	22.6	21.8	22.0	17.5	16.3	16.7
13	17.1	16.4	16.7	21.1	20.4	20.7	22.1	21.6	21.8	17.9	16.4	17.0
14	17.1	16.4	16.7	20.6	20.3	20.4	21.9	21.4	21.6	18.4	17.1	17.6
15	17.1	16.4	16.7	20.8	20.3	20.4	21.8	21.3	21.5	18.5	17.4	17.8
16	16.9	16.1	16.5	22.6	20.4	20.9	21.8	21.1	21.4	18.7	17.4	17.9
17	17.2	16.4	16.7	22.8	20.6	21.3	21.8	21.1	21.4	17.7	16.9	17.2
18	17.4	16.6	16.9	21.6	20.8	21.3	21.6	21.3	21.5	17.7	16.8	17.2
19	17.2	16.4	16.8	22.3	21.3	21.7	21.6	21.1	21.4	18.0	17.2	17.5
20	17.1	16.4	16.7	22.3	21.3	21.6	21.4	20.8	21.1	17.7	16.3	17.0
21	17.4	16.6	16.9	22.3	21.3	21.7	20.9	20.4	20.7	17.2	16.3	16.9
22	17.9	16.9	17.2	22.4	21.4	21.8	21.1	20.3	20.6	16.3	14.5	15.4
23	17.7	16.9	17.4	21.6	20.9	21.2	21.3	20.4	20.7	14.5	13.9	14.2
24	18.5	17.7	18.1	21.9	21.1	21.4	21.1	20.4	20.7	14.7	13.8	14.1
25	19.2	18.5	18.8	22.4	21.3	21.7	21.4	20.6	21.0	14.5	13.5	13.9
26	19.3	18.7	19.0	22.4	21.8	22.1	21.4	20.8	21.0	14.5	13.3	13.8
27	19.8	18.8	19.1	22.6	21.9	22.2	21.4	20.8	21.0	14.5	13.3	13.8
28	19.8	19.0	19.3	22.8	21.9	22.3	21.3	20.8	21.0	14.7	13.3	13.9
29	20.0	18.8	19.3	23.1	22.1	22.5	21.4	20.8	21.0	14.1	13.0	13.4
30	20.4	19.2	19.6	23.4	22.4	22.9	20.9	20.4	20.7	14.1	13.0	13.4
31				23.4	22.6	22.9	20.6	20.1	20.3			
MONTH	20.4	15.5	17.4	23.4	18.5	20.9	23.4	20.1	21.7	20.4	13.0	16.61

13081500 SNAKE RIVER NEAR MINIDOKA, ID--Continued

COLLECTION METHODS.--Electrofishing; boat (13A), backpack (11A).

LENGTH OF REACH.--515 m.

TIME ELAPSED FOR EACH COLLECTION METHOD.--13A 0.45 hours; 11A 0.16 hours.

ANOMALY CODES.--AA-none; DE-deformities; ER-eroded fins; LE-lesions; TU-tumors; AL-anchor worms; BL-black spot; CL-leeches; IC-ich; NE-blind; P -other parasites; PE-popeye.

HABITAT QUALITY INDEX.--.NA

COMMENTS .-- Large river.

BIOLOGICAL DATA, July 2000 FISH COLLECTION DATA

ORGANISM FAMILY GENUS SPECIES (COMMON)	DATE	NUMBER OF INDIV- IDUALS	PERCENT COMPO- SITION	LENGTH RANGE TOTAL MM	WEIGHT RANGE IN GM	ORIGIN	TROPHIC GROUP OF ADULTS	TEMPER- ATURE PREFER- ENCE	NUMBER AND TYPE OF ANOMALY
	July 26								
Catostomidae (Suckers) Catostomus ardens (Utah sucker)		77	29.6	405-550	750-1700	NATIVE	HERBIVORE	COLD	2-ER,2-DE, 2-LE,7-NE, 1-PA,62-AA
Centrarchdae (sunfishes)									
Micropterus dolomieui (Smallmouth bass)		8	3.1	163-232	70-211	INTRODUCED	PISCIVORE	COOL	1-ER,7-AA
Cottidae (Sculpins) Cottus bairdi									
(Mottled sculpin)		14	5.4	34-95	1-17	NATIVE	INVERTIVORE	COLD	14-AA
Cyprinidae (Carps and mi	nnows)								
(Common Carp) Rhinichthys osculus		8	3.1		3050-5750	INTRODUCED	OMNIVORE	WARM	1-ER,1-LE,6-AA
(Speckled dace)		104	40	31.80	1-6	NATIVE	INVERTIVORE	COLD	1-ER,103-AA
Richardsonius balteat (Redside shiner)	us	47	18.1	31-73	1-5	NATIVE	INVERTIVORE	COLD	47-AA
Salmonidae (Trouts) Oncorhynchus mykiss s	р.								
(Rainbow trout) Prosopium williamsoni		1	0.4	115	15	^a INTRODUCED	INVERTIVORE	COLD	1-AA
(Mountain whitefish	1)	1	0.4	90	13	NATIVE	INVERTIVORE	COLD	1-ER
TOTAL NUMBER OF TAXA 8 TOTAL INDIVIDUALS 2	60								

a-Rainbow trout are considered native in Idaho downstream of Shoshone Falls and introduced upstream of Shoshone Falls.

13081500 SNAKE RIVER NEAR MINIDOKA, ID--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1989 to 1996, February to September 1998, April to September 2000 (discontinued).

PERIOD OF DAILY RECORD .--

WATER TEMPERATURE: June to September 1993, June to September 1994, July to September 1996, February to September 1998, May to September 2000 (discontinued).

INSTRUMENTATION .-- Temperature recording data logger.

EXTREMES FOR PERIOD OF DAILY RECORD .--

WATER TEMPERATURE: Maximum, 24.0 °C Aug. 3-5, 1994.

COLLECTION METHODS.--Composite of 5, 0.25 m² samples. Richest targeted habitat--riffles.

MESH SIZE .-- 425 um.

AVERAGE DEPTH.--0.26 m.

AVERAGE PERCENT SHADING .-- 8.

AVERAGE VELOCITY .-- 0.65 m/s.

SUBSTRATE EMBEDDEDNESS CLASS RANGE.--4-5.

PERCENT FINES AVERAGE .-- 4.

BIOLOGICAL DATA, JULY 2000 BENTHIC INVERTEBRATE COLLECTION DATA

ORGANISM TAXON GENUS SPECIES DATE July 26	NUMBER OF INDIV- IDUALS	PERCENT COMPO- SITION
NON-INSECTS Ophidonais serpentina Uncinais uncinata Fluminicola n.sp. near fuscus Physella Hyalella azteca Acari	8 16 8 8 448 96	0.15 0.31 0.15 0.15 8.60 1.84
EPHEMEROPTERA Baetis tricaudatus	752	14.44
TRICHOPTERA Hydropsyche Hydroptila Ochrotrichia LEPIDOPTERA Petrophila	3224 128 24	61.90 2.46 0.46
DIPTERA Empididae-pupae Hemerodromia Simulium	48 72 40	0.92 1.38 0.77
CHIRONOMIDAE Chironomidae-pupae Cardiocladius Cricotopus Cricotopus Trifascia group Paratanytarsus Polypedilum	32 8 40 8 16 48	0.61 0.15 0.77 0.15 0.31

SUMMARY STATISTICS
TOTAL NUMBER OF TAXA 20
TOTAL INDIVIDUALS 5,208